Minnesota Amateur Radio Technical Society

http://www.mn-arts.org/

Don't forget to sign up on the reflector!!
March 2013 Edition

Frank Karnauskas/N1UW presents the ARRL affiliation certificate to Chuck Stroud/KA8HDE

March Meeting Minutes

We had an overflow crowd for the March meeting. 30 signed in on the attendance sheet! We enjoyed an excellent meeting. In addition to the ARRL presentation we had an excellent Show & Tell session followed by an informative tutorial from Mert & Craig as they discussed the AM transceiver project.

- Skip Jackson/KS0V and Frank Karnauskas/N1UW visited the club to present us with a certificate acknowledging MARTS as an ARRL affiliated club. This was presented on the one year anniversary of the club. Frank encouraged us to pursue the ARRL Special Services recognition. He will be forwarding information about this to Chuck.

- Treasurers Report:
  Paul Bushouse/N0TYE reports that there is $741 in the checking account and that the liability insurance for the upcoming year has been paid. This does not include the monies received at the meeting today from membership renewals.

- Field Day will be headed up by Tom Kent/WM0SS and will be assisted by Russ Ramirez/K0WFS and John Krawczak/KJ0P

- The club will participate in Mid-Winter Madness this year. Chuck Stroud has reserved a table for us and about 10 members said they planned on attending. Chuck encouraged all who would be attending to bring in a project or something they have built to display at the table.


The group at the March meeting

FYBO Results

Category - Multi Operator Single Station
Operator(s) - KB0R Larry, W0UFO Mert, AA0ZZ Craig, WM0SS Tom
Alternative Power - Yes
Lowest Temperature - 1F
QRPp – Yes
Final Score: 21216

April Program

Kurt Nordwall/KD0LKC will give us a report and slide show on his visit to the Porthcurno Telegraph Museum in England. We will learn some interesting history and view some very nice pictures of CW devices.

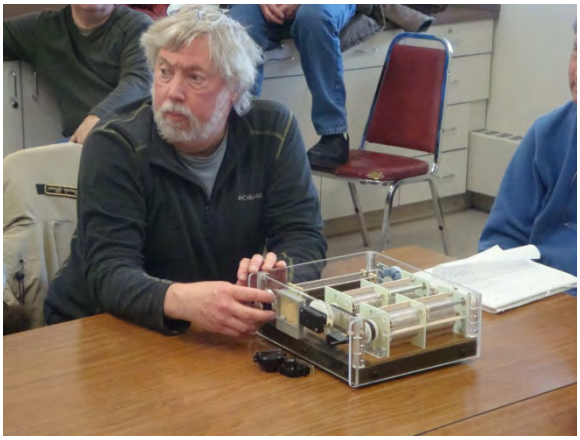
Show & Tell

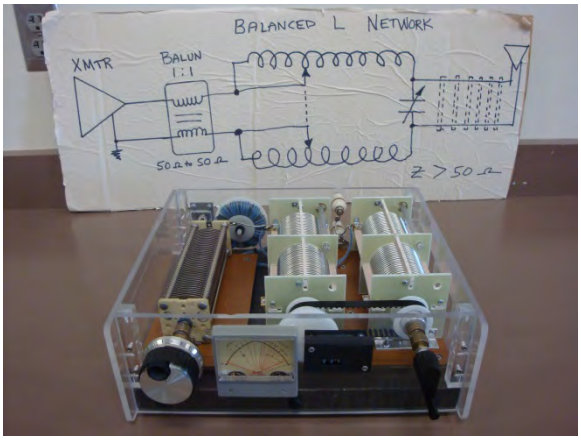
Bob Brock/K90SC brought in the QRP tuner that was on the front page of the latest edition of the QRP quarterly. Congratulations Bob!!

Bob explained the operation of his T type tuner design and noted some of its key features. The tuner has inputs for long wire and balance line. There is a 4:1 balun on the front end and tuning is accomplished by a 32 mh roller inductor and two variable capacitors. The capacitors are both dual section. One section at 160 pf and the other at 300 pf. Bob found that only the 160 pf sections were required. He has used the tuner on a number of antennas including a center fed dipole, zep and long wire. The tuner has handled everything he has hooked to it. Bob has also tested the tuner up to 100 watts, but this will be used in his shack primarily for QRP. He built the tuner into a handsome wood cabinet.

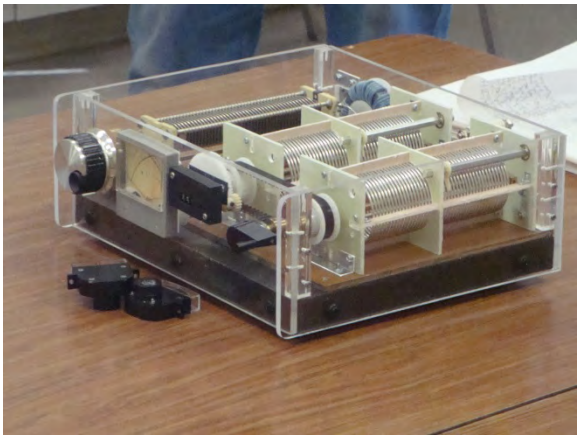
Bob encouraged the group to look into membership with QRP ARCI as they have a great quarterly magazine and other benefits which would be of interest to the group.

Craig Siegenthaler/AC0WQ brought in his balanced line tuner. The tuner is built using an L configuration which Craig explained in detail. Two MFJ roller inductors are ganged together using a cogged belt. He handcrafted a beautiful Plexiglas enclosure which also has the added benefit of keeping the Q on the coils high. He is toying with the idea of putting a current meter in each leg and showed us the meters he intends to use.





Dave Donaldson/WB7DRU brought in a QRSS beacon kit he recently received from England. When completed it will have an output of about 150 mw. It is CPU controlled and capable of outputting on 80, 40 & 30 meters. Modes include: CW, FSK/CW, DFCW, WSPR & Hellshreiber. This is the kit designed by G0XAR and G0UP. See http://www.hanssummers.com/qrsskitmm.html for further information about the kit.



Russ Ramirez/K0WFS brought in a copy of Build Your Own Transistor Radio and a copy of Electric Radio magazine. He also brought in a Free SoC board which he described as somewhat like an FPGA and also capable of doing mixed signals. More information can be found at: http://freesoc.net/ Additional resources can be found at: http://www.cypress.com/?id=2233&tabID=38413 and http://www.youtube.com/watch?v=7j1M_I3lG_0

Ron Dodge/K0TC explained how the site http://ham.jit.su/ worked as a reverse beacon and encouraged everyone to take a look at it. He mentioned that it had the capability of giving you a db report on your signal. Ron also encouraged everyone to participate in the ARRL CX contest this weekend.

Roy Forsstrom/AC7YZ won the door prize - Hands On Radio.

Buffalo Ham Fest

The club was well represented at the Buffalo Ham Fest held Saturday, March 23. For some interesting video check out what Jeremy Moody/KC0LDI has posted:

From the club booth:
http://youtu.be/_t8M22GLn4U?hd=1

View of the swap tables: http://youtu.be/DSDiv6lCt5c?hd=1

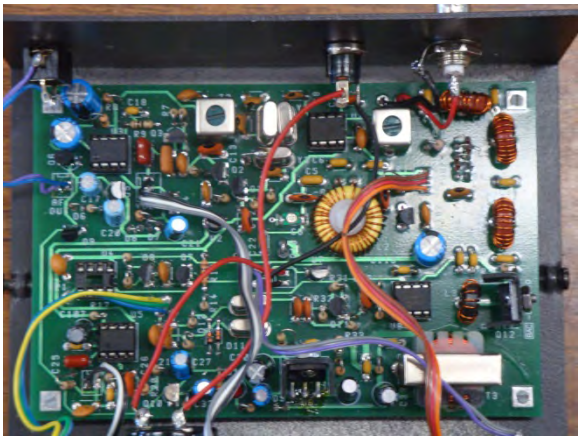
March Presentation

Craig Johnson/AA0ZZ and Mert Nellis/W0UFO gave us an update on their AM transceiver project which is roughly modeled after the now retired Retro 75 kit from Small Wonders Labs.

Craig explained how to make the receiver more sensitive by changing the detector. He then gave us an excellent chalk talk on what needs to be accomplished for AM demodulation. Craig has also revised his programmable VCO to be able to provide the two necessary frequencies required by the transceiver. He explained how the two VCO outputs would track each other for receive and transmit.

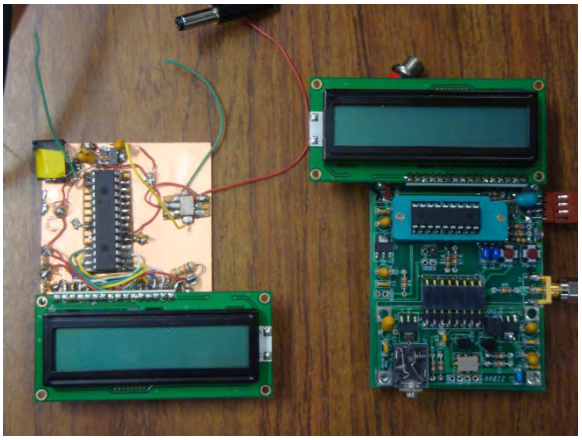
Mert then reviewed changes to the modulator circuit which primarily involves winding/building a new modulation transformer that does not easily saturate. He then explained by diagrams and hand drawn examples what needed to be accomplished to achieve 100% modulation without distortion.

This was a great update presentation and prototype circuits were displayed and explained.

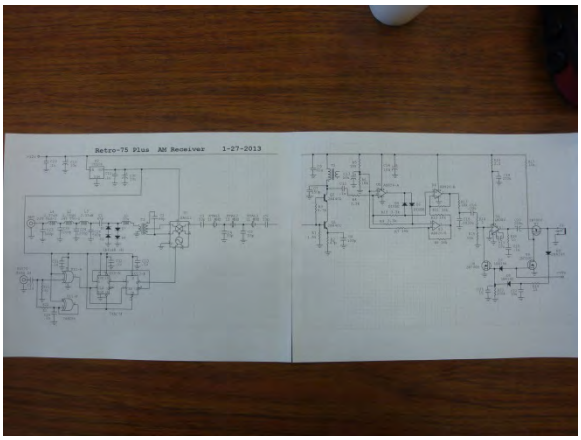


Repaired Retro 75

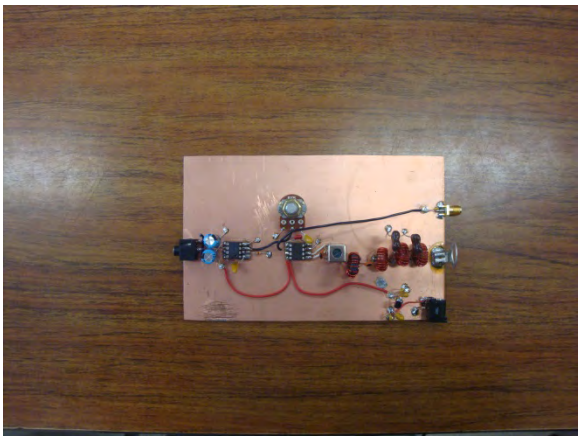
Craig/AA0ZZ



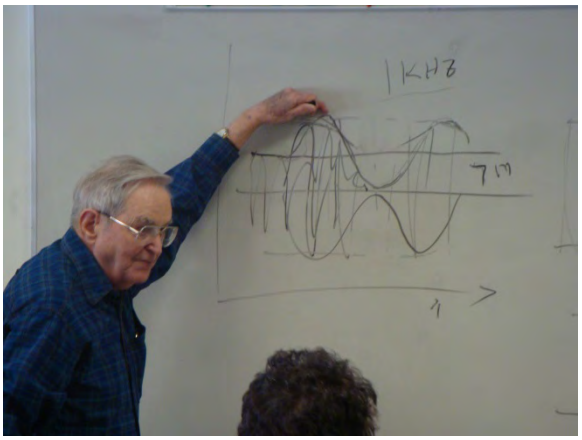
Craig's VCO's

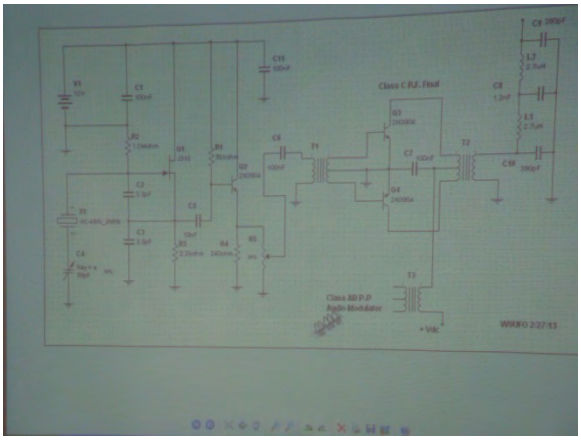


Mert/W0UFO

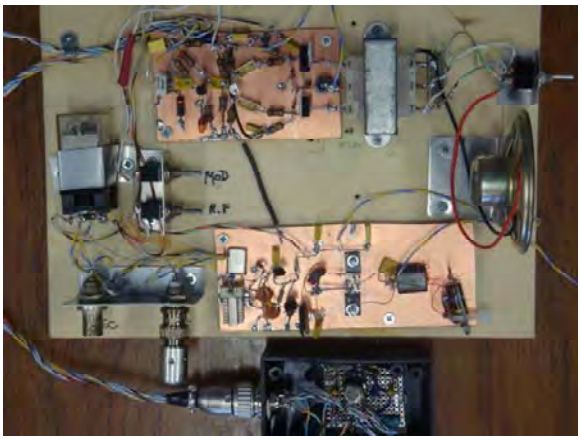


Craig's detector circuit



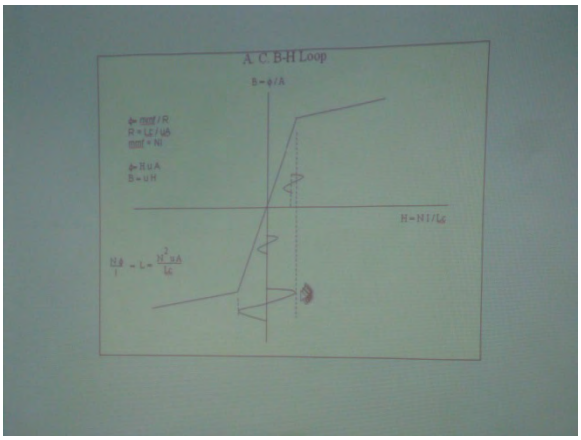


Mert's modulator circuit



Mert's prototype modulator & output circuit.

Respectfully submitted,
Steve, NW0C



Explaining the BH curve as it applied to the modulator under development.

Club Officers:

President:	*Chuck Stroud/KA8HDE*	*ka8hde79@gmail.com*
Vice Pres:	*Larry Gaalaas/KB0R*	*larry@circleg.net*
Secretary:	*Steve Ulrich/NW0C*	*ulrichs@comcast.net*
Treasurer:	*Paul Bushouse/N0TYE*	*p-bushouse@bethel.edu*
At Large:	*Tom Kent*	*tkent1952@gmail.com*